

Knowledge transfer between projects – What do contextual elements have to do with this?

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Abstract

This paper is about dealing with contextual elements, when it comes to replicating lessons learned (transferring knowledge) on energy efficient solutions in building renovation projects. The aim of this research is to make sure contextual elements of knowledge are adequately addressed in the knowledge transferring process, since applying energy efficient solutions and best practices have varying focus from context to context. This conceptual paper presents initial research ideas, basic theories and an overall model that will be used later to address the contextual issues in the knowledge transferring process. This paper is connected to an EU-project called "Rezbuild", which focuses on developing decision and planning support for accomplishing near zero-emission in renovation/refurbishment of dwellings.

Keywords: Lessons learned; Knowledge transfer; Building renovation; Construction; Contextual elements

1. Introduction

Sustainability and energy efficiency are topics that have gained much attention recently in many industries, including building and construction. Referring to previous studies, Johansson et al. [1] say that buildings are responsible for 30-40% of global carbon emissions and that there is hence a significant improvement potential for energy saving in the building sector.

In addition to the existing buildings, there is new construction. New construction efforts are expected to increase the current stock at a rate of 1% per year [2] [3]. In this context, what will be the status of building renovation? In this regard, it is relevant to refer a description provided by European Commission ([4], page 11):

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"The biggest challenge when reducing energy use in buildings is to increase the rate, quality and effectiveness of building renovation (currently only at 1.2% per year). To do this, it is necessary to reduce renovation costs and also to increase the speed at which it can be carried out in order to minimise disturbance for occupiers. To achieve an ambitious increase of the renovation rate (up to 2-3% per year), effective solutions need to be widely demonstrated and replicated."

The above description not only points out the importance of renovations of buildings in the future of the European building sector, but also emphasizes the importance of identifying lessons learned and transferring that knowledge to other relevant renovation projects.

An overall purpose of this paper (outline) is to find out how to replicate lessons learned (transfer knowledge) on energy efficient solutions in building construction and renovation projects effectively. The aim of this paper is to make sure contextual elements of knowledge are adequately addressed in the knowledge transferring process, since applying energy efficient solutions and best practices have varying focus from context to context. Applying a particular knowledge, which has produced a positive effect in a work-setting, does not necessarily produce the same effect in other work-settings. In order to ensure effective knowledge transfer, the knowledge must be modified according to the characteristics of the situation where the knowledge is to be transferred. This is a conceptual paper that presents initial research ideas, basic theories and an overall model that will be used later to address the contextual issues in the knowledge transferring process.

This paper is connected to one of the tasks in an EU research project called "Rezbuild" (<https://rezbuildproject.eu/>). The task is to collect existing knowledge on better energy efficient solutions for near zero-emission buildings in renovation / refurbishment projects, so that the knowledge can be shared to improve performance. The "Rezbuild" project focuses on developing decision and planning support for accomplishing near zero-emission in refurbishment of dwellings.

2. Knowledge transfer in project settings and contextual elements

Projects are per definition unique. However, they have both unique and known elements. The unique elements provide opportunities for creating new knowledge that can lead to more effectiveness. The known elements point out the relevance and need for sharing knowledge that can lead to improve efficiency. These two categories can be considered as knowledge exploration and knowledge exploitation respectively. Hence, project settings are arenas for dealing with ambidexterity [5]. O'Reilly & Tushman [6] and Davis & Brady [7] describe organizational ambidexterity is a form of dynamic project capabilities. In this paper, we primarily look at knowledge exploitation (sharing / transferring knowledge).

This paper takes into consideration a categorization presented by Spender [8], dividing knowledge in three major categories:

- Knowledge-as-data: The category tends to suggest that knowledge is considered as an object, and to point out the explicit and objective characteristics of knowledge
- Knowledge-as-meaning: This category deals with reflection and sense-making
- Knowledge-as-practice: This category views knowledge beyond the cognitive spectrum – beyond the sense-making aspect. It incorporates tacit characteristics of knowledge

Though the positive effects of knowledge sharing are recognized, it is still challenging to implement inter-project knowledge sharing and harvest the desired benefits from it [9]. There are various aspects that are to be considered when lessons learned and best practices are to be transferred. In this regard, we will look at how contextual elements affect the knowledge transferring process.

Contextual elements are primarily connected to the categories "knowledge-as-meaning" and "knowledge-as-practice" that Spender [8] presents, and hence can also become a tacit aspect of knowledge. Generally speaking, the tacit aspect of knowledge represents a huge portion of knowledge [10] [11]. It is widely said that

the explicit aspect of knowledge is only a tip of an ice-berg. Therefore, it is important to consider contextual elements when it comes to knowledge transfer.

In order to address contextual elements in knowledge transfer, we have to know first what contextual elements are. In this regard, we can identify contextual elements based on a categorization presented by Duffield & Whitty [12]: Systems and people contexts. These authors present this categorization as a part of their lessons learned model in project-based organizations. We will use this categorization to address our focus on contextual elements of knowledge transfer. Under systems contexts, we can look at for example, context of technology, infrastructure and work-routines. Under people context, we can look at, among other things, context of willingness to learn, work-norms, and cultural as well as social aspects. Hence, this categorization can contribute to identify contextual elements that are to be taken into account before a particular knowledge (lessons learned) is transferred and applied in another work-setting. As a result of this categorization, a check-list can be developed to verify whether contextual elements are adequately taken into consideration, and to influence / ensure successful transfer of knowledge from one project to another. Figure 1 illustrates the role of the check-list in the overall knowledge transferring process.

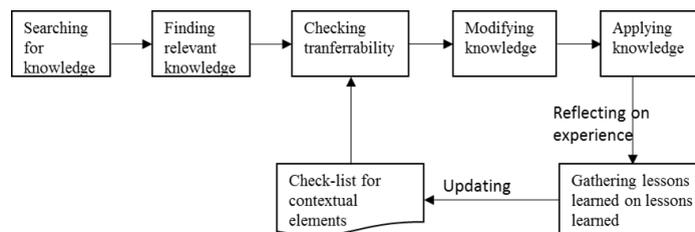


Figure 1: Lessons learned model with the consideration on contextual elements

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